

**ADEM GENERAL PERMIT RATIONALE  
NONCONTACT COOLING WATER AND BOILER BLOWDOWN  
ALG250000**

**DATE:** March 24, 2016

**PREPARED BY:** Lee Warren

**LOCATION: ALL WATERS OF THE STATE NOT DESIGNATED OUTSTANDING  
NATIONAL RESOURCE WATER OR OUTSTANDING ALABAMA WATER**

PERMIT IS REISSUANCE DUE TO EXPIRATION

**DISCUSSION:**

The Department is proposing to reissue NPDES General Permit ALG250000. The permit is intended to cover noncontact cooling water, cooling tower blowdown, uncontaminated condensate, and boiler blowdown with and without demineralizer wastewater.

**NOTE: The parameters for each of the following discharges, i.e. DSN#...., are proposed to be continued in this permit, as in the previous permit, unless otherwise noted.**

**DSN001** Discharges associated with non-contact cooling water, cooling tower blowdown, uncontaminated condensate, boiler blowdown, and demineralizer wastewater. This outfall requires monitoring and/or limitations for the following parameters:

Flow Flow is to be measured in gallons per day. Monitoring frequency is 1/month.

pH pH limitations are 6.0 daily minimum and 8.5 daily maximum for waste water discharges as set forth in ADEM Administrative Code R. 336-6-10. Monitoring frequency is 1/month.

**Temperature**

The temperature will be limited to 90 degrees Fahrenheit, except in the Tennessee and Cahaba River Basins and in the Tallapoosa River from Thurlow Dam to the confluence of the Tallapoosa and Coosa Rivers where it will be limited to 86 degrees Fahrenheit in accordance with ADEM Administrative Code Division 6, Volume 1. Monitoring frequency is 1/month.

**Total residual chlorine**

The daily maximum and the monthly average limits for chlorine are 0.019 mg/l and 0.011 mg/l. EPA's suggested water quality criteria for total residual chlorine of 0.011 mg/l for chronic toxicity and 0.019 mg/l for acute toxicity are being used as the monthly average and maximum values respectively for discharges into zero flow streams. Monitoring frequency is 1/2 weeks.

In accordance with a letter dated August 11, 1998 from EPA Headquarters and a 1991 memorandum from EPA Region 4's Environmental Services Division (ESD), due to testing and method detection limitations, a Total Residual Chlorine measurement below 0.05 mg/L shall be considered below detection for compliance purposes.

Based on best professional judgment (BPJ), facilities will be required to monitor for the concentrations of chlorine listed above except under two conditions. The conditions are:

1. If no chlorine is present in or added to the source water.
2. If the distance from the end of the pipe to the receiving water of the state is greater than 2,500 feet and the applicant can demonstrate that the above limits are being met at the receiving water of the state.

If these conditions cannot be met, the permittee must monitor as required by the permit.

However, if these conditions are met, the facility must code the total residual chlorine parameter on the electronic Discharge Monitoring Report (DMR) as \*9 or the hardcopy DMR as "NODI=9" (monitoring is conditional not required this period).

The permittee will be required to monitor during shock chlorination.

#### Chlorides, Total

If the boiler blowdown exceeds 5,000 gallons per day or if demineralizer wastewater is discharged, then total chlorides must be monitored. Chlorides will have a limit of 860 mg/l to protect water quality. If necessary, the demineralizer wastewater may be diluted to meet water quality standards. Monitoring frequency is 1/month.

#### Total Dissolved Solids

If the boiler blowdown exceeds 5,000 gallons per day or if demineralizer wastewater is discharged, then total dissolved solids must be monitored. If necessary, the demineralizer wastewater may be diluted to meet water quality standards. Monitoring frequency is 1/month.

The permit requires that the permittee shall notify the Director in writing not later than sixty (60) days prior to instituting the use of any biocide corrosion inhibitor or chemical additive in a cooling or boiler system, not identified in the application for this permit, from which discharge is allowed by this permit. Such notification shall include:

- (1) name and general composition of biocide or chemical,
- (2) 48-hour or 96-hour LC50 data for the fathead minnow (*pimephales promelas*) and cladoceran (*Ceriodaphnia dubia*) for fresh water discharges. For salt water, the

mysid shrimp, and sheepshead minnow or inland silverside. Other acceptable aquatic organisms may be allowed by the Department if sufficient information is submitted.

- (3) quantities to be used,
- (4) frequencies of use,
- (5) maximum discharge concentrations, and
- (6) EPA registration of number, if applicable.

The use of a biocide or additive containing tributyl tin, tributyl tin oxide, zinc, chromium or related compounds in a cooling or boiler system(s), from which a discharge regulated by the permit occurs, is prohibited. The use of any additive not identified in the permit or in the application for the permit prior to a determination by the Department that permit modification controlling discharge of the additive is prohibited.

This permit does not authorize new sources or new discharges of pollutants of concern to impaired waters unless consistent with an EPA-approved Total Maximum Daily Load (TMDL) and applicable State law or determined by the Department to not cause or contribute to the impairment. Impaired waters are those that do not meet applicable water quality standards and are identified on the State of Alabama's 303(d) list, or an EPA approved TMDL. Pollutants of concern are those pollutants for which the water body is listed as impaired and contribute to the listed impairment.

Section 316(b) of the Clean Water Act requires that facilities minimize adverse environmental impact resulting from the operation of cooling water intake structures (CWIS) by using the "best technology available" (BTA). U.S. EPA has promulgated rules to implement these requirements for new facilities (Phase I rules), existing industrial facilities (Phase II rules) and new offshore oil and gas extraction facilities (Phase III rules), and implementation must take place through the issuance of NPDES permits. However, there is a universe of facilities which are not specifically addressed by the rules, including:

- New and existing facilities, including offshore oil and gas, with a CWIS design flow less than 2 MGD;

All of these facilities, including those not specifically addressed by rules, must be evaluated for 316(b) compliance. For those facilities not addressed in Phase I, II, or III rules, a BTA determination must be made using best professional judgment.

For new facilities that are not subject to the Phase I rule, existing facilities that are not subject to the Phase II rule, or oil and gas facilities that are not subject to the Phase III rule, an initial determination of BTA has been made for the facility CWIS during the permit coverage renewal process.

The data submitted shall include:(1) any impingement and entrainment data based on the operation of the facility's CWIS, collected since the effective date of this NPDES permit, (2) a detailed description of any changes in the operation of the CWIS, or changes in the type of technologies used at the CWIS such as screens or other technologies affecting the rates of impingement and/or entrainment of fish and shellfish, and (3) an estimate of the intake flow reduction at the facility based upon the use of a 100 percent (or some lesser percentage) closed-cycle re-circulating cooling water system compared to a conventional once-through cooling water system. In addition the facility may submit the following as defined in 40 CFR 122.21(r) if data is available:

- Source water physical data
- Cooling water intake structure data
- Source water baseline biological characterization data
- Cooling water system data
- Intended method of compliance with impingement mortality standard
- Existing entrainment performance studies
- Operational Status

The CWIS must be operated and maintained in a manner that minimizes impingement and entrainment levels. Documentation detailing the steps that have and are being taken to minimize the impingement and entrainment levels shall be maintained on-site and made available upon request during inspections.

If an entity provides water to the permittee which is used for cooling by means of a surface water intake, the intake structure operated by the entity must be determined to represent the best technology available (BTA) to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

If the entity providing water to the permittee is a public water system in accordance with Section 1401 of the Safe Water Drinking Act or the water used for cooling consists of treated effluent which would otherwise be discharged, the permittee is exempt from the requirements of this permit condition.

Industrial General Permits may now cover discharges to a treasured Alabama Lake (TAL). Currently, Lake Martin is the only lake designated as a TAL. In the past permit cycle, industrial discharges to treasured Alabama Lakes were not covered under the General Permit. Now instead of excluding all such discharges from Industrial General Permit coverage, it will be based on a case by case review. However, the Department may still require certain discharges to a treasured lake to have coverage under an Individual NPDES Permit.